

Date: Sun, 10 Apr 94 07:10:15 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V94 #399
To: Info-Hams

Info-Hams Digest Sun, 10 Apr 94 Volume 94 : Issue 399

Today's Topics:

 change in mailing lis
 Daily Summary of Solar Geophysical Activity for 09 April
 Delivery Failure Report
 Error in EME Program Info
 HEEEEEEEEEEEEELP !!!
 Looking for TM-241 schematics
 Need Help
 Shuttle Rise/Set Times 4/10

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Sat, 9 Apr 1994 15:52:07 GMT
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!howland.reston.ans.net!pipex!bnr.co.uk!
bnrgate!corpgate!news.utdallas.edu!feenix.metronet.com!pubcon!
ralph.ward@network.ucsd.edu
Subject: change in mailing lis
To: info-hams@ucsd.edu

hi, I know you aren't the one to send this to, but since I have your
address;

this is for the mailer....
please remove

rmward@pubcon.fort-worth.tx.us from all mailing lists,

and add

ar11@pubcon.com

this is an alias that i can use to post everything to a bulletin.

thanks

Ralph Ward KB5UAA

rward@pubcon.com

Date: Sat, 9 Apr 1994 23:16:14 MDT

From: ihnp4.ucsd.edu!swrinde!gatech!newsxfer.itd.umich.edu!nntp.cs.ubc.ca!alberta!
ve6mgs!usenet@network.ucsd.edu

Subject: Daily Summary of Solar Geophysical Activity for 09 April

To: info-hams@ucsd.edu

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DAILY SUMMARY OF SOLAR GEOPHYSICAL ACTIVITY

09 APRIL, 1994

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(Based In-Part On SESC Observational Data)

SOLAR AND GEOPHYSICAL ACTIVITY INDICES FOR 09 APRIL, 1994

NOTE: The background x-ray flux continues less than A1.0 and energetic
electrons at > 2 MeV are still reaching very high flux levels.

!!BEGIN!! (1.0) S.T.D. Solar Geophysical Data Broadcast for DAY 099, 04/09/94

10.7 FLUX=072.6 90-AVG=096 SSN=011 BKI=5554 4444 BAI=034

BGND-XRAY=A1.0 FLU1=1.1E+06 FLU10=1.1E+04 PKI=6556 5444 PAI=045

BOU-DEV=106,075,077,066,046,054,042,041 DEV-AVG=063 NT SWF=00:000

XRAY-MAX= B1.6 @ 2206UT XRAY-MIN= A1.0 @ 2333UT XRAY-AVG= A2.7

NEUTN-MAX= +003% @ 0030UT NEUTN-MIN= -002% @ 1750UT NEUTN-AVG= +0.1%

PCA-MAX= +0.1DB @ 2350UT PCA-MIN= -0.2DB @ 0535UT PCA-AVG= +0.0DB

BOUTF-MAX=55359NT @ 0057UT BOUTF-MIN=55285NT @ 1105UT BOUTF-AVG=55320NT

GOES7-MAX=P:+000NT@ 0000UT GOES7-MIN=N:+000NT@ 0000UT G7-AVG=+070,+000,+000

GOES6-MAX=P:+127NT@ 1844UT GOES6-MIN=N:-117NT@ 0306UT G6-AVG=+089,+028,-053

FLUXFCST=STD:135,130,125;SESC:135,130,125 BAI/PAI-FCST=025,020,020/030,030,025

KFCST=5555 5555 5555 5554 27DAY-AP=022,029 27DAY-KP=5534 3334 4554 4444

WARNINGS=*GSTRM;*AURMIDWRN

ALERTS=**MINSTRM

!!END-DATA!!

NOTE: The Effective Sunspot Number for 08 APR 94 is not available.
The Full Kp Indices for 08 APR 94 are not available.
The 3-Hr Ap Indices for 08 APR 94 are not available.
Greater than 2 MeV Electron Fluence for 09 APR is: 2.3E+09

SYNOPSIS OF ACTIVITY

Solar activity was very low. There were no events of note. Region 7700 (N08E60) remains stable and is the only confirmed spotted region.

Solar activity forecast: solar activity is expected to be very low.

The geomagnetic field has been at unsettled to major storm levels. High latitude stations continued to see unsettled to severe storming through the period. This activity is most likely due to a well positioned coronal hole. Energetic electron fluxes (GT 2 MeV) ranged from moderate to very high through the period.

Geophysical activity forecast: the geomagnetic field is expected to be unsettled to minor storm for the next 24 hours, then will be unsettled to active for the remainder of the forecast period.

Event probabilities 10 apr-12 apr

Class M	01/01/01
Class X	01/01/01
Proton	01/01/01
PCAF	Green

Geomagnetic activity probabilities 10 apr-12 apr

A. Middle Latitudes

Active	30/30/30
Minor Storm	30/25/30
Major-Severe Storm	15/10/05

B. High Latitudes

Active	30/30/40
Minor Storm	35/30/20
Major-Severe Storm	25/20/15

HF propagation conditions continued well below normal over all regions. High and polar latitude regions continued to see propagation conditions varying from very poor to useless with worst propagation times during the local night sectors. Middle latitudes have also seen substantial signal degradation with fair to very poor propagation. Low latitudes have seen fair to good propagation with periods of poor propagation during the local night hours. Conditions should begin very gradually improving over the next 72 hours as levels of geomagnetic and auroral activity begin to subside. High and polar latitude paths will be the slowest to improve.

COPIES OF JOINT USAF/NOAA SESC SOLAR GEOPHYSICAL REPORTS

REGIONS WITH SUNSPOTS. LOCATIONS VALID AT 09/2400Z APRIL

NMBR	LOCATION	LO	AREA	Z	LL	NN	MAG	TYPE
7700	N08E60	202	0020	HRX	01	001	ALPHA	
7699	S09W57	319					PLAGE	

REGIONS DUE TO RETURN 10 APRIL TO 12 APRIL

NMBR	LAT	LO
7692	N18	160

LISTING OF SOLAR ENERGETIC EVENTS FOR 09 APRIL, 1994

BEGIN	MAX	END	RGN	LOC	XRAY	OP	245MHZ	10CM	SWEEP
NONE									

POSSIBLE CORONAL MASS EJECTION EVENTS FOR 09 APRIL, 1994

BEGIN	MAX	END	LOCATION	TYPE	SIZE	DUR	II	IV
NO EVENTS OBSERVED								

INFERRED CORONAL HOLES. LOCATIONS VALID AT 09/2400Z

ISOLATED HOLES AND POLAR EXTENSIONS									
	EAST	SOUTH	WEST	NORTH	CAR	TYPE	POL	AREA	OBSN
73	S53W34	S60W64	S40W90	S31W54	320	EXT	NEG	024	10830A
74	N53W32	N30W56	N40W62	N60W44	305	EXT	POS	009	10830A
75	N11E27	N11E27	N20E15	N24E23	238	ISO	NEG	001	10830A
76	N06E86	S16E64	S05E53	N09E86	192	ISO	POS	008	10830A

SUMMARY OF FLARE EVENTS FOR THE PREVIOUS UTC DAY

Date	Begin	Max	End	Xray	Op	Region	Locn	2695 MHz	8800 MHz	15.4 GHz
NO EVENTS OBSERVED.										

REGION FLARE STATISTICS FOR THE PREVIOUS UTC DAY

	C	M	X	S	1	2	3	4	Total	(%)
Uncorrelated:	0	0	0	0	0	0	0	0	000	(0.0)

Total Events: 000 optical and x-ray.

EVENTS WITH SWEEPS AND/OR OPTICAL PHENOMENA FOR THE LAST UTC DAY

Date	Begin	Max	End	Xray	Op	Region	Locn	Sweeps/Optical Observations
NO EVENTS OBSERVED.								

NOTES:

All times are in Universal Time (UT). Characters preceding begin, max, and end times are defined as: B = Before, U = Uncertain, A = After. All times associated with x-ray flares (ex. flares which produce associated x-ray bursts) refer to the begin, max, and end times of the x-rays. Flares which are not associated with x-ray signatures use the optical observations to determine the begin, max, and end times.

Acronyms used to identify sweeps and optical phenomena include:

II	= Type II Sweep Frequency Event
III	= Type III Sweep
IV	= Type IV Sweep
V	= Type V Sweep
Continuum	= Continuum Radio Event
Loop	= Loop Prominence System,
Spray	= Limb Spray,
Surge	= Bright Limb Surge,
EPL	= Eruptive Prominence on the Limb.

** End of Daily Report **

Date: 10 Apr 94 14:37:13 GMT
From: news-mail-gateway@ucsd.edu
Subject: Delivery Failure Report
To: info-hams@ucsd.edu

From: NAME: Mail Postmaster
FUNC:
TEL: <POSTMASTER AT A1 AT ANDV02>
To: net%"Info-Hams@UCSD.EDU"@RCVAX@MRGATE

ALL-IN-1 was unable to deliver your message dated to
ADAMS,SE - no such ALL-IN-1 account
on node ANDV02

The subject of the message was :
Info-Hams Digest V94 #398

Date: 10 Apr 94 11:34:28 GMT
From: news-mail-gateway@ucsd.edu
Subject: Error in EME Program Info
To: info-hams@ucsd.edu

I said:
>From: agate!howland.reston.ans.net!pipex!warwick!uknet!uos-ee!ee.surrey.ac.uk!
M.Willis@ames.arpa
Subject: EME Programs
To: info-hams@ucsd.edu

In article <9404071257.AA13047@cmr.ncsl.nist.gov>, rc@cmr.ncsl.Nist.GOV (Robert Carpenter) writes:

|> In response to the recent request for leads to PC programs helpful to EME
|> operators, may I suggest "SKYMOON" by W5HN. While I don't operate EME, I've
|> seen Dave use it a few times and it looks very nice. The fact that W5HN has
|> the first DXCC on 144 MHz shows it con't be TOO bad.
|> 73 de Bob w3otc@amsat.org

agate!howland.reston.ans.net!pipex!warwick!uknet!uos-ee!ee.surrey.ac.uk!
M.Willis@ames.arpa
says:
>Don't you mean W5UN has DXCC on 144 MHz?
>Mike

I now say: Details, details..... Of course it's W5UN who does SkyMoon.
Somehow old 6-m calls like W5HN seem to replace any "similar" call in my mind?

Thanks for the correction.
Bob w3otc@amsat.org

Date: Sun, 10 Apr 94 10:54:28 cet
From: "Piotr J. Ochwal" <ochwal@usctoux1.cto.us.edu.pl>
Subject: HEEEEEEEEEEEEELP !!!
To: psmith@convex.com

Howdy!

Presley! I have a small request for you. Maybe the fact, you live in
America will be significant for it ;-)

recently I have bought a small PC - Atari Portfolio and I'd like to use it
for packet-radio. I managed to find even the circuitdiagram for the modem
device, but there is still ONE BIG problem. I hunt for an ATARI PORTFOLIO
BUS CONNECTOR. It is the extraordinary female connector used for
connecting to the Portfolio bus. please! ask for it your friends,
colleagues, ham's, everyone; because it is IMPOSSIBLE to get this part in
Poland. I will pay any reasonable price for it...

Thanks in advance and waiting for answer,

Peter, SP9TNM @ SP9TNM

Date: Sun, 10 Apr 1994 13:40:13 GMT
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!utnut!cannon.ecf!
wiesznie@network.ucsd.edu
Subject: Looking for TM-241 schematics
To: info-hams@ucsd.edu

This is for a friend of mine:

I'm looking for schematics for the TM-241A radio. My radio went
bad recently (power dropping whenever the radio gets warm) and I'd like
to give it a shot at fixing it. The schematics I got with the
radio are actually for the -541 and -441 version but not -241.
I'd appreciate it very much if anyone would send me a copy (of course,
I would provide a SASE).

Thanx very much

Alex VE3G0P

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0-----0
|      Sebastian Wiszniewski - CompEng - University of Toronto      |
|      Internet: wisznie@skule.ecf.toronto.edu                      |
0-----0
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Date: 10 Apr 1994 12:43:33 GMT
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!convex!convex!psmith@network.ucsd.edu
Subject: Need Help
To: info-hams@ucsd.edu

I received the following message from Peter, SP9TNM and I don't know of a source of supply for this item. If you have knowledge of where I can get this, please send me address, phone, or other information on how to obtain this.

I will purchase it and mail it to him. He's trying to set this machine up for packet...

Send any information to psmith@convex.com

Thanks and 73 Presley N5VGC

----- Forwarded Message -----

Date: 10 Apr 94 12:16:47 GMT
From: news-mail-gateway@ucsd.edu
Subject: Shuttle Rise/Set Times 4/10
To: info-hams@ucsd.edu

SB SAREX @ AMSAT \$STS-59.005
STS-59 Eastern R/S Times 04/10

Below are the rise and set times for STS-59 for selected US cities over the next three days. This data was generated to help hams without orbit programs to participate in the SAREX activities. Please note that the times shown are UTC and NOT LOCAL TIME. This listing includes only those passes with an elevation greater than 5 degrees. For information regarding SAREX frequencies and operations procedures, check your local PBBS, or bulletins from W1AW, W5RRR, W6VIO or WA3NAN.

Symbol key: rise = time that shuttle appears above horizon
tca = time of closest approach to observer

set = time that shuttle disappears below horizon
 el = maximum elevation above horizon
 geo = geometry: A = Ascending orbit, moving south to north
 D = Descending orbit, moving north to south
 E = passes east of observer
 W = passes west of observer

New York City STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:24:33	12:27:47	12:30	9	A-W	18
10Apr94	17:04:35	17:07:38	17:10	7	D-E	21
10Apr94	18:36:02	18:39:56	18:43	74	D-W	22
11Apr94	10:33:28	10:37:15	10:40	47	A-E	33
11Apr94	12:06:24	12:09:32	12:12	8	A-W	34
11Apr94	16:46:14	16:49:23	16:52	7	D-E	37
11Apr94	18:17:45	18:21:39	18:25	60	D-W	38
12Apr94	10:14:45	10:18:33	10:21	58	A-E	49
12Apr94	11:47:47	11:50:52	11:53	8	A-W	50
12Apr94	16:27:30	16:30:44	16:33	8	D-E	53
12Apr94	17:59:03	18:02:57	18:06	49	D-W	54

Washington D.C. STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:23:52	12:27:02	12:29	9	A-W	18
10Apr94	18:35:59	18:39:53	18:43	41	D-E	22
11Apr94	10:32:47	10:36:33	10:39	40	A-E	33
11Apr94	12:05:43	12:08:47	12:11	8	A-W	34
11Apr94	18:17:41	18:21:35	18:24	50	D-E	38
12Apr94	10:14:03	10:17:50	10:21	48	A-E	49
12Apr94	11:47:07	11:50:07	11:52	7	A-W	50
12Apr94	17:58:59	18:02:54	18:06	61	D-E	54

Atlanta, GA STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:21:51	12:24:54	12:27	8	A-W	18
10Apr94	18:36:42	18:39:40	18:42	6	D-E	22
10Apr94	20:08:00	20:11:47	20:15	28	D-W	23

11Apr94	10:30:52	10:34:32	10:37	25	A-E	33
11Apr94	12:03:44	12:06:39	12:09	7	A-W	34
11Apr94	18:18:19	18:21:25	18:24	7	D-E	38
11Apr94	19:49:45	19:53:29	19:56	23	D-W	39
12Apr94	10:12:07	10:15:49	10:19	30	A-E	49
12Apr94	11:45:09	11:47:59	11:50	6	A-W	50
12Apr94	17:59:33	18:02:45	18:05	8	D-E	54
12Apr94	19:31:05	19:34:47	19:37	19	D-W	55

Miami, FL STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	20:10:08	20:13:57	20:17	42	D-W	23
11Apr94	10:29:46	10:33:27	10:36	28	A-W	33
11Apr94	19:51:52	19:55:39	19:58	32	D-W	39
12Apr94	10:11:07	10:14:46	10:17	23	A-W	49
12Apr94	19:33:12	19:36:57	19:40	26	D-W	55

Compiled by Dan Schultz, N8FGV

Submitted by Frank H. Bauer, KA3HDO for the SAREX Working Group

Send comments to n8fgv@amsat.org

/EX

SB SAREX @ AMSAT \$STS-59.006

STS-59 Central R/S Times 04/10

Below are the rise and set times for STS-59 for selected US cities over the next three days. This data was generated to help hams without orbit programs to participate in the SAREX activities. Please note that the times shown are UTC and NOT LOCAL TIME. This listing includes only those passes with an elevation greater than 5 degrees. For information regarding SAREX frequencies and operations procedures, check your local PBBS, or bulletins from W1AW, W5RRR, W6VIO or WA3NAN.

Symbol key: rise = time that shuttle appears above horizon

tca = time of closest approach to observer

set = time that shuttle disappears below horizon

el = maximum elevation above horizon

geo = geometry: A = Ascending orbit, moving south to north

D = Descending orbit, moving north to south

E = passes east of observer

W = passes west of observer

Chicago, IL STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:21:59	12:25:48	12:29	51	A-W	18
10Apr94	13:55:35	13:58:20	14:00	5	A-W	19
10Apr94	18:34:06	18:37:49	18:41	18	D-E	22
10Apr94	20:06:10	20:09:44	20:12	15	D-W	23
11Apr94	10:33:09	10:35:55	10:38	5	A-E	33
11Apr94	12:03:43	12:07:31	12:10	42	A-W	34
11Apr94	13:37:26	13:40:06	13:42	5	A-W	35
11Apr94	18:15:47	18:19:33	18:22	20	D-E	38
11Apr94	19:47:56	19:51:25	19:54	13	D-W	39
12Apr94	10:14:19	10:17:11	10:19	6	A-E	49
12Apr94	11:45:02	11:48:50	11:52	36	A-W	50
12Apr94	17:57:04	18:00:52	18:04	22	D-E	54
12Apr94	19:29:17	19:32:42	19:35	11	D-W	55

Huntsville, AL STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:21:20	12:24:43	12:27	12	A-W	18
10Apr94	18:36:15	18:39:08	18:41	6	D-E	22
10Apr94	20:07:28	20:11:18	20:14	36	D-W	23
11Apr94	10:30:59	10:34:29	10:37	15	A-E	33
11Apr94	12:03:11	12:06:27	12:09	10	A-W	34
11Apr94	18:17:51	18:20:53	18:23	6	D-E	38
11Apr94	19:49:12	19:53:00	19:56	29	D-W	39
12Apr94	10:12:13	10:15:46	10:18	18	A-E	49
12Apr94	11:44:34	11:47:47	11:50	9	A-W	50
12Apr94	17:59:06	18:02:13	18:04	7	D-E	54
12Apr94	19:30:32	19:34:17	19:37	24	D-W	55

Houston, TX STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:18:54	12:22:28	12:25	18	A-W	18
10Apr94	20:07:29	20:11:06	20:14	15	D-E	23
10Apr94	21:39:55	21:42:52	21:45	7	D-W	24
11Apr94	10:29:32	10:32:26	10:34	7	A-E	33
11Apr94	12:00:43	12:04:12	12:07	15	A-W	34

11Apr94	19:49:08	19:52:49	19:56	18	D-E	39
11Apr94	21:21:49	21:24:33	21:26	5	D-W	40
12Apr94	10:10:41	10:13:43	10:16	8	A-E	49
12Apr94	11:42:05	11:45:31	11:48	13	A-W	50
12Apr94	19:30:24	19:34:07	19:37	21	D-E	55

Denver, CO STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	13:51:31	13:55:07	13:58	17	A-W	19
10Apr94	20:04:02	20:07:49	20:11	22	D-E	23
10Apr94	21:36:21	21:39:38	21:42	10	D-W	24
11Apr94	12:01:25	12:04:55	12:07	15	A-E	34
11Apr94	13:33:19	13:36:51	13:39	15	A-W	35
11Apr94	19:45:43	19:49:32	19:52	25	D-E	39
11Apr94	21:18:10	21:21:19	21:23	8	D-W	40
12Apr94	11:42:38	11:46:12	11:49	17	A-E	50
12Apr94	13:14:41	13:18:11	13:21	14	A-W	51
12Apr94	19:27:00	19:30:51	19:34	28	D-E	55
12Apr94	20:59:33	21:02:35	21:05	7	D-W	56

Compiled by Dan Schultz, N8FGV

Submitted by Frank H. Bauer, KA3HDO for the SAREX Working Group

Send comments to n8fgv@amsat.org

/EX

SB SAREX @ AMSAT \$STS-59.007

STS-59 Western R/S Times 04/10

Below are the rise and set times for STS-59 for selected US cities over the next three days. This data was generated to help hams without orbit programs to participate in the SAREX activities. Please note that the times shown are UTC and NOT LOCAL TIME. This listing includes only those passes with an elevation greater than 5 degrees. For information regarding SAREX frequencies and operations procedures, check your local PBBS, or bulletins from W1AW, W5RRR, W6VIO or WA3NAN.

Symbol key: rise = time that shuttle appears above horizon

tca = time of closest approach to observer

set = time that shuttle disappears below horizon

el = maximum elevation above horizon

geo = geometry: A = Ascending orbit, moving south to north

D = Descending orbit, moving north to south

E = passes east of observer

W = passes west of observer

Seattle, WA STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	13:51:06	13:54:17	13:56	9	A-E	19
10Apr94	15:22:07	15:25:58	15:29	49	A-W	20
10Apr94	16:55:04	16:58:27	17:01	11	A-W	21
10Apr94	18:28:05	18:31:19	18:34	8	D-E	22
10Apr94	20:00:13	20:03:59	20:07	20	D-E	23
10Apr94	21:32:13	21:36:02	21:39	27	D-W	24
11Apr94	13:32:40	13:35:58	13:38	10	A-E	35
11Apr94	15:03:51	15:07:41	15:11	43	A-W	36
11Apr94	16:36:51	16:40:12	16:43	10	A-W	37
11Apr94	18:09:50	18:13:04	18:15	8	D-E	38
11Apr94	19:41:56	19:45:43	19:49	22	D-E	39
11Apr94	21:13:57	21:17:44	21:21	24	D-W	40
12Apr94	13:13:54	13:17:15	13:20	12	A-E	51
12Apr94	14:45:10	14:49:00	14:52	38	A-W	52
12Apr94	16:18:11	16:21:32	16:24	10	A-W	53
12Apr94	17:51:09	17:54:25	17:57	9	D-E	54
12Apr94	19:23:13	19:27:03	19:30	23	D-E	55
12Apr94	20:55:16	20:59:01	21:02	21	D-W	56

Albuquerque, NM STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:18:28	12:22:03	12:25	18	A-E	18
10Apr94	13:50:52	13:54:04	13:56	9	A-W	19
10Apr94	20:05:08	20:08:22	20:11	8	D-E	23
10Apr94	21:36:42	21:40:25	21:43	21	D-W	24
11Apr94	12:00:06	12:03:44	12:06	22	A-E	34
11Apr94	13:32:43	13:35:49	13:38	8	A-W	35
11Apr94	19:46:46	19:50:06	19:52	9	D-E	39
11Apr94	21:18:28	21:22:07	21:25	18	D-W	40
12Apr94	11:41:21	11:45:01	11:48	26	A-E	50
12Apr94	13:14:08	13:17:09	13:19	7	A-W	51
12Apr94	19:28:01	19:31:26	19:34	11	D-E	55
12Apr94	20:59:48	21:03:24	21:06	15	D-W	56

Los Angeles, CA STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	13:48:21	13:52:07	13:55	38	A-W	19
10Apr94	21:35:15	21:39:05	21:42	29	D-E	24
11Apr94	13:30:06	13:33:50	13:37	31	A-W	35
11Apr94	21:16:56	21:20:47	21:24	35	D-E	40
12Apr94	13:11:26	13:15:09	13:18	26	A-W	51
12Apr94	20:58:13	21:02:06	21:05	42	D-E	56

Honolulu, HI STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	15:12:23	15:16:05	15:19	39	A-E	20
11Apr94	00:36:28	00:39:50	00:42	10	D-E	26
11Apr94	02:08:42	02:11:37	02:14	7	D-W	27
11Apr94	14:54:03	14:57:47	15:01	52	A-E	36
12Apr94	00:17:42	00:21:08	00:24	12	D-E	42
12Apr94	01:50:08	01:52:54	01:55	5	D-W	43
12Apr94	14:35:20	14:39:05	14:42	70	A-E	52
12Apr94	23:59:38	00:03:11	00:06	15	D-E	58

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SB SAREX @ AMSAT \$STS-59.008

STS-59 World R/S Times 04/09

Below are the rise and set times for STS-59 for selected worldwide cities over the next three days. This data was generated to help hams without orbit programs to participate in the SAREX activities. Please note that the times shown are UTC and NOT LOCAL TIME. This listing includes only those passes with an elevation greater than 5 degrees. For information regarding SAREX frequencies and operations procedures, check your local PBBS, or bulletins from W1AW, W5RRR, W6VIO or WA3NAN.

Symbol key: rise = time that shuttle appears above horizon
tca = time of closest approach to observer
set = time that shuttle disappears below horizon
el = maximum elevation above horizon

geo = geometry: A = Ascending orbit, moving south to north
D = Descending orbit, moving north to south
E = passes east of observer
W = passes west of observer

London, England STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:36:36	12:40:31	12:43	57	D-W	18
10Apr94	14:09:16	14:12:03	14:14	5	D-W	19
11Apr94	06:09:51	06:13:25	06:16	16	A-E	30
11Apr94	07:41:21	07:45:13	07:48	48	A-W	31
11Apr94	09:13:55	09:17:37	09:20	18	D-W	32
11Apr94	10:46:17	10:50:07	10:53	24	D-E	33
11Apr94	12:18:19	12:22:14	12:25	50	D-W	34
11Apr94	13:51:05	13:53:44	13:55	5	D-W	35
12Apr94	05:51:06	05:54:42	05:57	17	A-E	46
12Apr94	07:22:40	07:26:32	07:29	44	A-W	47
12Apr94	08:55:14	08:58:57	09:02	18	D-W	48
12Apr94	10:27:35	10:31:26	10:34	25	D-E	49
12Apr94	11:59:37	12:03:32	12:06	44	D-W	50

Paris, France STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	12:37:04	12:41:00	12:44	55	D-W	18
11Apr94	06:09:49	06:13:32	06:16	24	A-E	30
11Apr94	07:41:41	07:45:30	07:48	30	A-W	31
11Apr94	09:14:25	09:18:01	09:21	15	D-W	32
11Apr94	10:46:47	10:50:35	10:53	22	D-E	33
11Apr94	12:18:48	12:22:42	12:26	47	D-W	34
12Apr94	05:51:05	05:54:50	05:58	26	A-E	46
12Apr94	07:23:00	07:26:49	07:30	28	A-W	47
12Apr94	08:55:44	08:59:21	09:02	14	D-W	48
12Apr94	10:28:05	10:31:54	10:35	23	D-E	49
12Apr94	12:00:06	12:04:00	12:07	42	D-W	50

Tokyo, Japan STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	19:42:55	19:46:23	19:49	15	A-E	23

10Apr94	21:14:59	21:18:21	21:21	11	A-W	24
11Apr94	03:28:54	03:32:07	03:34	8	D-E	28
11Apr94	05:00:27	05:04:11	05:07	24	D-W	29
11Apr94	19:24:31	19:28:04	19:31	17	A-E	39
11Apr94	20:56:49	21:00:05	21:02	10	A-W	40
12Apr94	03:10:09	03:13:27	03:16	9	D-E	44
12Apr94	04:41:47	04:45:29	04:48	20	D-W	45
12Apr94	19:05:45	19:09:21	19:12	20	A-E	55
12Apr94	20:38:13	20:41:25	20:44	9	A-W	56

Sydney, Australia STS-59 Element Set JSC-009

date	rise	tca	set	el	geo	orbit
10Apr94	14:54:31	14:57:18	14:59	5	A-E	19
10Apr94	16:25:42	16:29:25	16:32	31	A-W	20
11Apr94	06:48:47	06:52:21	06:55	20	D-E	30
11Apr94	08:21:26	08:24:25	08:26	7	D-W	31
11Apr94	14:36:07	14:39:02	14:41	6	A-E	35
11Apr94	16:07:27	16:11:07	16:14	25	A-W	36
12Apr94	06:30:01	06:33:38	06:36	24	D-E	46
12Apr94	08:02:50	08:05:45	08:08	6	D-W	47
12Apr94	14:17:21	14:20:23	14:22	7	A-E	51
12Apr94	15:48:47	15:52:25	15:55	21	A-W	52

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